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| 10/769,385 | 01/30/2004 | Tienteh Chen | 200312792-1 | 8388 |

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HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

TSOY, ELENA

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1762

DATE MAILED: 02/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/769,385

Applicant(s)

CHEN ET AL.

Examiner

Elena Tsoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
4a) Of the above claim(s) 23-37 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-22 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/04, 5/05.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Election/Restrictions

1. Applicant's election of Group I, claims 1-22 in the reply filed on 12/21/2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 1-37 are pending in the application. Claims 23-37 are withdrawn from consideration as directed to a non-elected invention.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-13, 15-22 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6, 8, 15-22 of copending Application No. 11/257,960. Although the conflicting claims are not identical, they are not patentably

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distinct from each other because claims of the current application are broader in scope than those of '960.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

As to claim 6, it is well known in the art to use high shear mixer in obtaining thoroughly mixed dispersion.

4. Claim 14 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims of copending Application No. 11/257,960 in view of Alexander et al (US 3,007,878).

Application No. 11/257,960 fails to teach that pH of the system is monitored and maintained at a predetermined level.

Alexander et al teach that the positive charge density and degree of metal oxygen compound coating on the silica particles are important factors in establishing stability of the resulting sol (See column 6, lines 17-20), which factors depend on concentration of a metal compound and pH of the system (See column 6, lines 20-38). In other words, pH of the system has to be maintained at a predetermined level, i.e. should be monitored.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have monitored pH of a system in Application No. 11/257,960 and maintained at a predetermined level with the expectation of providing the desired positive charge density and degree of metal oxygen compound coating on the silica particles since Alexander et al teach that the positive charge density and degree of metal oxygen compound coating on the silica particles

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ate important factors in establishing stability of the resulting sol, which factors depend on concentration of a metal compound and pH of the system.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirose et al (US 6,203,899) in view of Abe et al (US 5,372,884) and Alexander et al (US 3,007,878), further in view of Santo et al (US 5,965,252).

Hirose et al disclose a method of preparing an ink-jet media sheet (See column 3, lines 4-13), comprising preparing a porous coating composition (See column 4, lines 60-63) comprising cationic ultrafine particles having a positive charge on their surfaces and adsorbability of acid substances such as oxides of magnesium, calcium, aluminum, zinc, chromium, iron, copper, tin, lead and manganese or particles having a negative charge on their surfaces like silica surface-treated to change the negative charge on the surface to a positive charge (See column 3, lines 62-67; column 4, lines 1-3); and coating the porous coating composition on a media substrate (See column 4, lines 40-43). Among the ultrafine particles of the metal oxides, particularly preferable examples include ultrafine particles of alumina, and alumina hydrate such as gibbsite, bayerite, nordstrandite, crystalline boehmite, diasporite and pseudoboehmite (See column 4, lines 3-15).

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Cationized silica can be made by treating silica with a compound containing some of the cationic metal oxides or metal atoms such as alumina and alumina hydrate such as gibbsite, bayerite, nordstrandite, crystalline boehmite, diaspore and pseudoboehmite (claimed surface activating agent) (See column 3, lines 62-67; column 4, lines 3-15) or by treating silica with an organic compound having both amino group or quaternary ammonium group thereof and functional group having reactivity to a silanol group on the surface of silica, such as aminoethoxysilane (See column 4, lines 19-26) by dispersing silica in water and contacting it with the silane (See column 15, lines 23-28).

Hirose et al fail to teach that cationized silica is treated with the cationic metal oxides or metal atoms such as alumina and alumina hydrate by dispersing silica in an aqueous environment to form an aqueous dispersion; and contacting the surface-activated silica particulates with organosilane reagents to form reagent-modified and surface-activated silica particulates.

Abe et al teach that a cation-modification of colloidal silica for the use in an ink receiving layer (See column 2, lines 28-34) by coating with a hydrous metal oxide such as hydrous aluminum oxide, hydrous zirconium oxide, hydrous tin oxide or the like can be carried out by the method described in US 3,007,878 to Alexander et al (See column 2, lines 41-58).

Alexander et al teach that the method comprises mixing a 30% aquasol of colloidal silica (See column 7, lines 56-57) with an aqueous solution of a basic salt of a polyvalent metal such as 1 M/L (See column 7, lines 63-66) basic aluminum chloride (See column 4, lines 9-10) to coat the silica particles with an oxygen compound of the polyvalent metal and thereby forming a stable aquasol of positively charged coated silica particles (See Fig. 2; column 1, lines 58-63; column 2, lines 1-40; column 4, lines 1-19).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to have carried out coating of colloidal silica with alumina or alumina hydrate in Hirose et al by contacting colloidal silica in an aqueous dispersion with a basic salt of a polyvalent metal such as aluminum in an aqueous solution with the expectation of providing the desired cation-modification, as taught by Abe et al and Alexander et al.

As to claims 2-3, it is held that a proper sequence of adding ingredients to obtain the most satisfactory mixture is within a skill of a person of ordinary skill in the art, and such a choice does not involve invention.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added silica dispersion to a metal salt solution in Hirose et al in view of Abe et al and Alexander et al including portion-wise addition with the expectation of providing the desired cation-modification of silica since it is held that a proper sequence of adding ingredients to obtain the most satisfactory mixture is within a skill of a person of ordinary skill in the art, and such a choice does not involve invention.

As to claim 6, it is well known in the art to use high shear mixer in obtaining thoroughly mixed dispersion.

As to claim 14, Alexander et al teach that the positive charge density and degree of metal oxygen compound coating of the silica particles are important factors in establishing stability of the resulting sol (See column 6, lines 17-20), which factors depend on concentration of a metal compound and pH of the system (See column 6, lines 20-38). In other words, pH of the system has to be maintained at a predetermined level, i.e. should be monitored.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have monitored pH of a system in Hirose et al in view of Abe et al and Alexander et al and maintained at a predetermined level with the expectation of providing the desired positive charge density and degree of metal oxygen compound coating on the silica particles since Alexander et al teach that the positive charge density and degree of metal oxygen compound coating on the silica particles are important factors in establishing stability of the resulting sol, which factors depend on concentration of a metal compound and pH of the system.

Hirose et al in view of Abe et al and Alexander et al fail to teach that silica particles are coated with both alumina or alumina hydrate and with the organic compound

Santo et al teach that an alumina hydrate surface-treated in an aqueous dispersion (See column 7, lines 52-56) with a silane coupling agent (See column 3, lines 39-44) such as gamma-aminopropyltriethoxysilane (See column 5, line 2) when used in an ink-receiving layer composition provides image formed on the ink-receiving layer with no change in tint and good color reproducibility (See column 2, lines 56-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have treated an aqueous dispersion of alumina or alumina hydrate coated silica in Hirose et al in view of Abe et al and Alexander et al with an organosilane reagent with the expectation of providing image formed on an ink-receiving layer with no change in tint and good color reproducibility since Santo et al teach that an alumina hydrate surface-treated in an aqueous dispersion with a silane coupling agent such as gamma-aminopropyltriethoxysilane when used in an ink-receiving layer composition provides image formed on the ink-receiving layer with no change in tint and good color reproducibility.

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Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Thursday, 9:00AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ELENA TSOY
PRIMARY EXAMINER
ETsoy

Elena Tsoy
Primary Examiner
Art Unit 1762

February 2, 2006